UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,504	10/17/2000	Noriyasu Adachi	PM 273956	6780

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EXAMINER
BRODA, SAMUEL

ART UNIT	PAPER NUMBER
2123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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Office Action Summary	Applicati n N . 09/673,504	Applicant(s) ADACHI, NORIYASU
	Examin r Samuel Broda	Art Unit 2123

-- *The MAILING DATE of this communication appears on the c ver sheet with th corresp ndence address* --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2000*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 19* is/are rejected.

7)☒ Claim(s) *14-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-19 have been examined.

Priority

2.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a) - (d) and 35 U.S.C.

371; these papers have been placed of record in the file. The date of receipt of the 35 U.S.C. 371

requirements is 17 October 2000.

Drawings

3.   This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is allowed.

Claim Objections

4.   The following is a partial quotation of 37 CFR § 1.75:

. . .
    (c) . . . Claims in dependent form shall be construed to include all the limitations of the claim incorporated by
reference into the dependent claim. . . .

4.1   Claims 14-18 are objected to under 37 CFR 1.75(c) as being in improper form

because a multiple dependent claim cannot depend from any other multiple dependent claim.

See MPEP § 608.01(n). Accordingly, these claims have not been further treated on the merits.

Claim Rejections - 35 U.S.C. § 112, Second Paragraph

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.1   Claims 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

5.2   Regarding claim 9, lines 4 and 5-6 both recite the limitation "a floating point number" and lines 6-7 recite the limitation "with floating point number." It is unclear if these references are meant to refer to one or more floating point numbers.

5.3   Regarding claims 10-11, these claims are dependent on claim 9 and each claim refers to "a floating point number" and/or "the floating point number." It is unclear if these references are meant to refer to one or more floating point numbers.

5.4   Regarding claim 12, this claim includes the term "wherein the integer conversion condition is able to be adjusted." The term "is able" makes the scope of the claims indefinite as it is unclear if the functions recited after this term represents an intended use or an additional limitation.

5.5   Claim 13 is dependent on claims 9-12 and is therefore also rejected.

Claim Rejections - 35 U.S.C. § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> . . .
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.1   Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by

Kanokohata, Japanese Kokai Patent Application No. 7-93137, 7 April 1995 (translation PTO 04-

2921).

6.2   Regarding claim 1, Kanokohata teaches a method for assisting development of a

program for a vehicle, including:

a program generation step of generating a vehicle control program using a program

generator having a function for generating a segment of vehicle-use code based on a control

specification input [control program specification of Fig. 1 converted to assembly language of

Figs. 7A-7B; see paragraphs 0028 and 0029;

a downloading step of downloading the generated vehicle control program to a vehicle

ECU [downloading step provided by "control device 20" that downloads the assembly program

to microcomputer; see paragraphs 0040 through 0044 and Fig. 15];and

a debug step of debugging the generated vehicle control program by causing the vehicle

ECU to execute the vehicle control program [debug step provided by debugger and emulator as

part of the program development device shown in Fig. 15; see paragraph 0040].

Therefore, Kanokohata anticipates claim 1.

6.3   Regarding claims 2-3, the debugging, control steps, and inspection steps are

inherent in the use of the program development device of Kanokohata.

6.4   Regarding claim 4, the assembly program corresponds to a vehicle model that is

downloaded to the microcomputer.

6.5   Regarding claim 7, the program development device of Kanokohata has a

"display device 55."

Claim Rejections - 35 U.S.C. § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.1   Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kanokohata, in view of Ackermann et al, "Visual Programming in an Object-Oriented

Framework," pp. 1-4 (1996) (paper available at:

http://citeseer.ist.psu.edu/ackermann96visual.html).

7.2   Regarding claims 5-6, the method and system of Kanokohata does not appear to

teach generation of programs modified to suit an integer logic or to permit an integer conversion

condition input.

However, Ackermann et al teaches the "MET++" application visual programming

approach including the representation of components and relations that are defined by wires

between input/output ports. See page 2 paragraph 1. According to Ackermann et al at page 2

paragraph 3:

> A port holds meta information about its data type, value domain, and step size. . . .
> Because only simple types are sent through the communication wires, and ports
> automatically provide automatic type conversion, a port can be connected to any
> other one without any restriction. This generic feature allows a highly flexible
> configuration of components even from different frameworks.

Regarding claims 5-6, it would have been obvious to one of ordinary skill in the art at the

time of Applicant's invention to include the automatic type conversion feature of the ports of

Ackermann et al into the program development device of Kanokohata and provide integer logic

and conversion, because the resulting combination would permit a highly flexible configuration

of components.

7.3   Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kanokohata, in view of Ackermann et al, and further in view of Aoyama et al, "Design

Specification in Japan: Tree-Structured Charts," IEEE Software, Vol. 6 No. 2, pp. 31-37 (March 1989).

7.4   Regarding claim 8, the combination of Kanokohata and Ackermann et al does not appear to teach the generation of data and state flowcharts, followed by the generation of the vehicle-use code based on the flowcharts.

However, Aoyama et al teaches the generation of software code from tree-structured charts. According to Aoyama et al page 31 column 1 paragraph 1:

> . . . Tree-structured charts use representations of basic programming structures, such as sequence, selection, and iteration, as elements. The support environment then generates source code in many languages automatically.

Page 33 figures 3 and 4 of Aoyama et al illustrate examples of actual tree-structured charts having separate data and state flowcharts.

Further according to Aoyama et al at page 34 column 3 paragraph 7 through page 36 column 1, paragraph 1, tree-structured charts: (1) support the reuse of software components at the design level and across languages, (2) automatically bind components so the specification writer does not need to consider the implementation details, and (3) improve productivity and quality.

Regarding claim 8, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include the generation of programs from data and state

flowcharts as taught by Aoyama et al into the program development device combination of

Ackermann et al Kanokohata, because the resulting combination would support the reuse of

software components, permit the specification to ignore implementation details, and improve

productivity and quality.

    7.5   Regarding claim 19, this claim is the computer readable memory claim

corresponding to claim 8 and is rejected using the analysis of claim 8.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to Applicant's

disclosure. Reference to Logan, III et al, U.S. Patent 6,243,857 is cited as teaching a windows-

based flowcharting and code generation system.

    Reference to Sadahiro, U.S. Patent 6,237,136 is cited as teaching method for generating

source code based on a code description file.

    Reference to Ohkubo et al, U.S. Patent 6,212,677 is cited as teaching a specification

generating method including generation of control and data flowcharts.

    Reference to Grabow et al, "Automatic Generation of C++ Code from an ESCRO2

Specification," IEEE Proceedings of the 19th Annual International Computer Software and

Applications Conference, pp. 18-24 (August 1995), is cited as teaching the generation of C++

code from a specification and used to program a control system.

Reference to Dellen et al, "Automated Code Generation from Graphical, Reusable Templates," IEEE/AIAA Proceedings of the 10th Digital Avionics Systems Conference, pp. 299-304 (October 1991), is cited as teaching the automated generation of code based on signal block diagrams.

9.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

SAMUEL BRODA, ESQ.
PRIMARY EXAMINER